Chairman Gordon, Chairman McKeon, members of the committee, good morning, and thank you for the opportunity to testify today. My name is Scot Naparstek, and I am the Chief Operating Officer of Amtrak. I am responsible to Wick Moorman and to the Amtrak Board of Directors for the operation of the 21,000 mile Amtrak system and the maintenance of our equipment and infrastructure.

Background: NY Penn Station Operations and Maintenance

I am therefore responsible for the operation and maintenance of New York Penn Station. Dating from 1910, the station now hosts more than 1300 trains on every weekday – which, as you heard, is twice as many as it carried in 1976. The number of station tracks were never expanded to support this volume of traffic, and more trains have been added onto an aging and constrained system that was already operating beyond capacity, stressing the 149 switches and more than a thousand track components that keep trains moving every day. Additionally, the station has signaling and electrification systems dating from the 1930s and many electrical and mechanical components, including HVAC systems, fire and life safety systems, and the structure itself, which must all be maintained and renewed aggressively to support the tremendous demands placed on them at the nation’s busiest transportation facility.

As Wick said, the extraordinary use of the station today illustrates a larger theme. This facility is simply over-capacity and has not received all of the systematic renewal and maintenance it badly needs. We have a 108 year old station that is completely full, doing things it was never designed to do; with no margin for error. As we have just witnessed, under these conditions, relatively small or isolated incidents that might have minimal impacts elsewhere on our system can swell suddenly into major service disruptions here.

Balancing Train & Maintenance Schedules

I have here a plan of the station tracks, and this will give you some idea of how complex Penn Station is. At either end of the station, you can see how the tracks funnel into the East and Hudson River tunnels. These giant complexes of switches and signals are heavily trafficked, and a comparatively minor disruption here can shut down access to a tunnel entirely, which is a major issue.

Amtrak conducts regularly scheduled maintenance and inspections on all infrastructure components, and biweekly track inspections are a part of this daily routine. In addition to the biweekly track inspections, all switches receive comprehensive monthly inspections. There are also several major infrastructure improvement programs in progress now and with more to come in the future. While these projects are vital, their substantial work requirements must also be juggled with the station’s maintenance needs and the operation of trains in a facility that is at full capacity, even when everything is running well. The heavy train traffic also restricts the time available for maintenance and reduces asset life cycles, requiring more frequent asset replacement.

Our opportunities to inspect and maintain infrastructure are limited to off-peak hours between 11:30pm and 4:30am during the work week. Much work is scheduled on the weekends, but it is often the case
that we must prioritize between the need to work in the station, in the tunnels, or on one of the ongoing capacity or improvement projects, so as to minimize the impacts of this work on weekend train schedules. The inability to take track out of service for long periods of time makes it very difficult to undertake larger-scale projects. Short duration outages are very inefficient, as mobilizing and demobilizing can require a major portion of the outage timeframe. All this makes work harder to get done and also drives up maintenance costs.

**Amtrak Inspection Standards**

Before I discuss the two recent derailments and NJT train 3850, I need to stress two points. The first, and the most important, is that in most cases Amtrak sets and observes track standards that are more restrictive, and therefore safer, than those mandated by the Federal Railroad Administration. We use automated inspections to measure track geometry and ultrasound testing to ensure the integrity of our rail. Whenever a track condition is discovered, protocol is followed to either reduce authorized speeds or take the track out of service and repair the condition. Prior to both derailments, track inspections were completed as required. Although conditions were noted on inspection reports for being close to, but within, permitted tolerance at both locations, these track conditions were being monitored to ensure the track remained in compliance.

**March 24 – Acela 2151**

The first derailment involved Amtrak Acela train 2151, which derailed at low speed while leaving the station on March 24, within a minute of departure. The rear door of the last car of the train and the rear power car were still adjacent to the platform when the Acela train sideswiped a New Jersey Transit train after leaving the rails. You can see a yellow highlighted spot here on the map to indicate the point of derailment. As you can see, a train that derails on these tracks blocks tunnel access, and that’s a serious problem at any time of the day, but particularly at rush hour.

This derailment was caused by a slight mismatch of just 1/4” at a newly installed track component called a “frog”, a grooved casting at the center of the switch where the rails meet. This frog had been replaced approximately six weeks before the derailment as part of a renewal program which was incrementally upgrading this infrastructure, as track outages permitted. It was connected to an existing smaller curve-worn section of rail, creating the mismatch. The crews attempted to reduce the mismatch at the time of installation by grinding the frog, so the profile of the existing rail and the newly installed frog were within Amtrak’s specifications. At the time of installation, the joint met the standards, but it is now clear that it did not meet them at the time of derailment, and the natural forces the train exerted at a curve caused the flange of the wheel to catch the edge of the joint and ride up over it, derailing the train. We have since revised our standards so that a mismatch of the kind that existed upon installation of the new frog would definitely be considered outside of tolerance and not permissible. We also immediately inspected frogs in all our major stations, including Penn Station, to ensure this condition was not present anywhere else.
April 3 – New Jersey Transit 3926

The derailment of New Jersey Transit train 3926 on April 3 was caused by defective ties. The train was entering Penn Station from the South Tube of the Hudson River Tunnel when the rails spread beneath the third car of the train, causing it to drop down between the rails and derail the 5th, 6th and 7th cars. In this incident, several consecutive ties failed under the movement of the train, and the connections of the rail fastening system lost their effectiveness, allowing the rails to slide outward along the ties. While we were fortunate that some cars reached the platform before coming to a stop and passengers were able to exit the train from the adjacent platform, passengers from behind the derailed cars had to be evacuated by climbing down onto the trackbed, walking forward, and reboarding the train to exit onto the platform. Our track inspectors had noted some tie displacement in this area during their biweekly inspections, but because the track gauge, which is the distance between the rails, appeared to be within allowable limits, immediate repairs were not deemed to be required, with the expectation that the ties would be replaced during upcoming renewal work. Our forces made substantial repairs to the track, signal, and electrical systems that included major repairs to three switches, replacement of four switch machines and their associated cable and operating rods, replacement of numerous electrical bonds in the rail, as well as two broken rails and numerous damaged ties. You can see here on the diagram where the train derailed. That derailment limited access to the South Tube to the lower-numbered tracks, here at the bottom, while the higher-numbered tracks at the top could only reach the North Tube. We lost a significant amount of flexibility, which was a bigger issue than just track availability.

The equipment was rerailed the morning after the derailment, and the track was returned to service on the morning of the 7th, a period of five days, which entailed a very considerable disruption of scheduled service. We have worked jointly with the FRA to inspect the track at Penn Station, and here on this track diagram you can see where we concentrated our efforts, focusing on the heavily trafficked junction points, or “interlockings” at the tunnel entrances. Based on their findings, we have conducted some minor repairs and advanced the schedule of work for tie replacement we had previously planned for track 7 within the station. Details of these inspections have been shared with Long Island Rail Road and New Jersey Transit.

April 14 - Disabled NJ Transit 3850

The third incident involved New Jersey Transit train 3850, en route from Trenton to New York Penn on Friday, April 14. Our power directors, who are responsible for managing the supply of power to the overhead wires that power trains, received a report of an “electrical trip” – similar to a circuit breaker tripping in your house, when something shorts out. The engineer reported a loud noise and loss of air pressure on the train, so he began to troubleshoot the locomotive, thinking it might be an air system issue. When the power directors reenergized the system, it held power and an Amtrak rescue engine was sent, arriving forty minutes after the train stopped.

We learned then that the NJT engine had a damaged “pantograph” – the mechanical arm that contacts the overhead wires to draw current. When a pantograph breaks, it can pull down the wires, so we sent an electric traction maintainer out, because we had an early report that some wire was down. We did discuss evacuation from the tunnel, but the report of downed wire was a concern, as it could create a hazard to evacuating passengers. Upon inspection, when we realized how badly the pantograph was damaged, we decided that the safest course would be to cut it away. Once that was done, we were able to reenergize, raise the second pantograph on the locomotive and move the train under its own power.
to the station. It arrived at 6:02, almost 3 hours late. We conducted a thorough investigation of the tunnel and found no wire down or other issue with the structure of the electric catenary system, although we found and repaired the point where the electrical arc occurred. Upon inspection, it was determined that the pantograph was missing the carbon strip at the point where the pantograph slides along the wire. Our conclusion has therefore been that the cause of this incident appears to be related to the pantograph on the locomotive, rather than a problem with Amtrak’s electrical system infrastructure.

**Penn Station Safety & Security Protocols**

While this was going on, we were only able to use a single tube of the Hudson River Tunnel. This caused delays and congestion at Penn Station, and extreme crowding within the passenger concourse as passengers waited for trains. It was under these conditions that non-passenger occupant of Penn Station tried to strike an Amtrak Police officer in our concourse. In response to that attack, an Amtrak police officer had to use a Taser, and when someone in the crowd heard the sound of the Taser, they confused it with gunshots and yelled, starting a spontaneous movement toward the doors.

Due to the disabled New Jersey Transit train, the command post at the station was staffed and communicating with the New York Police and Fire Departments, who were already present. Law enforcement was able to confirm there were no shots fired within five minutes of the Taser event, and immediately began making announcements to that effect over the public address system. All agencies in the station shared that information with their personnel over their radios. An after action review of the event was held on April 20, attended by representatives of the railroads, first responders, law enforcement agencies and other stakeholders, and we are planning on holding a tabletop exercise in June, with the goal of reviewing and improving our performance in such situations in the future.

We never want incidents of these kinds to happen and work hard to prevent them. They are frightening, dangerous, inconvenient and costly to the railroads and our economy – but they are also a product of the situation that we’ve created by placing so many people and trains in such a constrained facility.

These three incidents highlight just how vulnerable this system is. Everything in a century old station with forty year old track must be at 100% effectiveness at all times to avoid potentially massive service disruptions. A single, relatively minor incident can take a tunnel out of service, and at a minimum, a tunnel outage can cause sufficient chaos to disrupt an entire morning or evening rush hour. We do not have an effective backup or margin of error in this station, because our system is always at capacity. This risk is perhaps best demonstrated by the Hudson River tunnels and explains why it is so crucial that we undertake the Gateway Program as soon as possible.

**Need for an Infrastructure Renewal Program**

We’ve now reached the point where the station handles more daily users than LaGuardia, JFK, and Newark Liberty Airports combined in vastly undersized passenger spaces. The time available for maintenance and repair has decreased significantly, in response to the ever-growing traffic levels, creating more wear and tear on an aging infrastructure.

Our people have had to become very resourceful and they do a good job of maintaining the station and the Northeast Corridor to ensure its safety and continued operation. As Wick said, if this was not true,
on-time performance for New Jersey Transit trains on the NEC could not be in the 90% range, on an annual basis. However, we need to do an even better job and a new strategy for maintaining this infrastructure is required. Keeping components in service beyond their expected life cycle greatly increases the risk for failure, and a significant number of the track components at Penn Station are approaching the end of their useful lives.

Over the past few years, Amtrak has begun a program to renew the track at Penn Station, but we have reached the limits of what can be done on weekends and nights alone. As Wick has announced, the time has come when we must now undertake a series of major track and switch renewal projects in Penn Station, beginning with the complex of tracks and switches in the western portion of the station, known as “A” Interlocking, which you can see here on the diagram.

We plan to advance this work through a series of major projects beginning in May and continuing through the fall, to quickly achieve the benefits of this renewal work for our partners and all our passengers. In addition to “A” Interlocking, we will be doing further renewal work on various station tracks through roughly June, 2018, with a majority of that work being done on weekends.

This work will require track closures, operational coordination, and schedule changes, which will impact the services of all the railroads operating at Penn Station. However, we will work collaboratively with both railroads to find the optimal way to get this and other projects done quickly while minimizing the impact on schedule train service and passengers. As we come to consensus on the plan and schedules, we will communicate them and the associated benefits and impacts to all of you and the broader public.

We understand the implications of this initiative and none of this will be easy. However, this is essential work and I am confident that if we can sustain the station in the short-to-medium term, we can build ourselves the breathing space we will need to deliver the major improvements New York Penn Station will need to serve the metropolitan area for decades to come.

Thank you for the opportunity to testify and we look forward to your questions.